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By October 1968 nine out of 80 conceptual models submitted in the elementary teacher education project had been selected for funding. One of the nine models, designed by a consortium of Ohio state universities, is directed at six target groups because of the encompassing impact of change in education. The groups--inservice teachers, preschool and elementary preservice teachers, teacher educators, and administrative and supportive personnel--are trained by the college and public schools to work with multiunit, multicultural elementary schools which employ techniques of team teaching and individualized instruction. The training medium is the specification, which is a printed (and computerized) page of instructions about the treatment, materials, and evaluation to be used to train the teacher in one or more of the program's 2,123 behavioral objectives. The latter are organized according to particular topics and subject areas with five "contexts" of the training program--instructional organization, educational technology, contemporary learning-teaching process, societal factors, and research. For example, the behavioral objective of listing factors to be considered in individualizing reading instruction is ordered under Instructional Organization (context), Necessary Training for Instruction (subject), and Academic Disciplines and Skills-Methodology Reading (topic). Progress through the program is determined individually. The model also provides for continuous and systematic evaluation. (ED 025 456-7 are related documents.) (LP)

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EDUCATIONAL COMMENT/1969

Contexts For Teacher Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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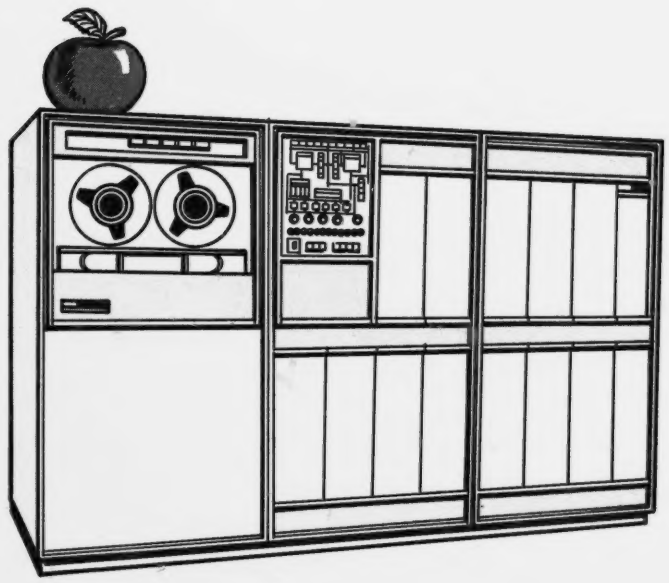
Edited by Richard Saxe



EDUCATIONAL SPECIFICATIONS FOR TEACHER EDUCATION

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The task of designing a program of teacher education which is not out of date before it is even fully implemented has frustrated the best efforts of a host of teacher educators. If we liken such a program to the impossible dream of the man from La Mancha, then the variety of existing archaic curricula for teacher education become so many broken lances shattered in vain attempts to relate insights from the past to the flux of the merging present and future.

For the first time, however, events suggest that a relevant program of teacher education may not really have to remain a Quixotic scheme. The Bureau of Research of the U.S. Office of Education has provided funds and solicited the best efforts of nine research teams to design **and implement** exemplary model programs of teacher education. These programs are to do more than incorporate or adjust to innovations of this time. They are to provide the structure and the impetus for continuing adaptive change in teacher education. The documents assembled in this collection are part of the efforts of one of these research teams seeking to meet the challenge offered by the Bureau of Research. It is my assignment in these pages to reveal enough of the overall project so that the succeeding papers may be placed in perspective.

Background of the Teacher Education Project

American teacher educators have always been ready to talk about educational change, to extol new curricula and methods, and to provide the appearance of positive reaction to educational innovations in the common schools. But when such efforts have run their course relatively little improvement in teacher education has been visible. Most teacher educators appear to be basically conservative by nature and the general evidence from their efforts and the products of their programs indicates substantial satisfaction with the status quo. Prevailing patterns of teacher education programs today are much as they were at the close of World War II with the general course of study providing attention to general education of a broad nature stressing Western cultural concerns, the usual professional courses (child development, methods, curriculum) accompanied by some student field experiences, and possibly some opportunity for limited sub-

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ject matter specialization. The net result is and has been that teacher education programs and personnel are often rather pedestrian, appear incongruous in relationship to a modern technological society, and have not done the job of creatively educating teachers. And the most unfortunate aspect of the entire situation is that young teachers subjected to such preparation go into schools and practice for a year or a lifetime from their limited and conservative teacher education base with only an occasional dose of in-service education applied for what good it may accomplish.

Testimony to the foregoing situation has been voluminous and continuous. Ryan, of the University of Chicago Graduate School of Education, has summed it up:

> Few people are satisfied with the professional training given to teachers. Complaints come not only from elder statesmen and admirals but also from teacher educators and their students.
>
> Criticism from within the educational community is perhaps the more telling since it comes from the people who have to live with the results. The dissatisfaction seems to center on the relevance of present professional training to the daily work of teachers.[1]

The eminent Committee for Economic Development in its latest statement on American education has clearly pointed out:

> The future of the schools depends in large part on whether they can overcome in educational policy and practice what is frequently an extreme conservatism and a strong resistance to change. This depends in turn on whether they can develop a genuine openness to experiment and innovation.
>
> We are convinced that reconstruction of instructional staffs, instructional patterns, and school organization must lie at the heart of any meaningful effort to improve the quality of schooling in this country.
>
> The preparation of teachers should be geared to the major developments in educational research and to the improved staffing patterns of the schools. The schools need variety in the talent and functions of their teachers rather than sameness and standardization. They need teachers who are capable of grasping the value of new ideas and are able to move in new directions when the evidence warrants.[2]

Does this concern with educational change and teacher education suggest that everything is wrong and nothing right with teacher preparation? The answer is obviously in the negative. We can all point to many teacher education improvements, even innovations; but the total concern for change in teacher education from within and

without the profession as evidenced by literature on the subject indicates that teacher education is in transition, moving from well-known past beliefs and practices to programs based on new concepts involving different educational approaches more consistent with social and educational change.

The Bureau of Research of the U.S. Office of Education recognized these facts about teacher education change and teacher education transition when it decided over a year ago to inaugurate a multi-phase elementary teacher education project which would first provide designs for outstanding, or model, programs for the training of elementary teachers and eventually result in the implementation and operation of the best models produced. This project is being developed in three distinct phases. The first phase, which was announced October 16, 1967 and completed October 31, 1968, was an effort to design conceptual models which would result in "educational specifications for a comprehensive undergraduate and in-service teacher education program for elementary teachers.[3] The specifications produced were to be the blueprints for exemplary teacher training programs. From over 80 design proposals submitted, nine were selected and funded through the expenditure of approximately 1.5 million dollars. The successful proposers were the universities of Florida State, Georgia, Massachusetts, Michigan State, Pittsburgh, Syracuse, Toledo, and Teachers College, Columbia, as well as the Northwest Regional Educational Laboratory based in Portland, Oregon. These institutions published the results of their research in two and three volume reports which were made available to institutions interested in succeeding phases of the project.

Phase II of the project is an effort to determine the feasibility of developing, implementing, and operating a model teacher program based upon the specifications designed by one or more of the groups engaged in Phase I. Proposals have been developed for this study phase, and approximately ten institutions will be selected for feasibility studies with the total expenditure of funds again totaling about 1.5 million dollars. The feasibility effort will provide analyses of resources and costs as well as developing appropriate administrative and management systems and devices needed in initiating, carrying on, controlling and evaluating the long-term program of development necessary to implement a Phase I design or combination of designs. Phase II project work begins May 1, 1969 and will be completed December 31, 1969.

The final phase of the Bureau of Research teacher education project, Phase III, will be the actual implementation and development of a model or design previously produced and analyzed in Phases I and II by one or more than one institution which graduates at least 100 elementary teachers yearly. Actually, the plan is to implement several models and at this date it appears that possibly three institutions will be involved and funded. This final phase will attempt to bring together, through a few demonstration institutions, the best elements of educational thinking, techniques and resources, well-funded and well-conceived, which could bring about a distinct improvement and up-dating of elementary teacher education. As a consultant to the U.S.O.E. has indicated, what is really wanted is a "quantum jump" in the field of teacher education. Bureau of Research plans concerning the third phase are incomplete at present and await the results of the Phase II feasibility study proposals.

The Consortium Design

The nine teacher education models which have been produced are distinct and unique and no two took exactly the same approach in the process of designing educational specifications. To really understand the philosophy and far-reaching goals of the U.S.O.E. elementary teacher education project, the reader will need to examine the reports of the nine projects. This paper is an attempt to provide some flavor of the changes contemplated in the Bureau of Research teacher education project.

We began our model development efforts with the belief that existing programs of teacher education were not adequate to prepare future teachers for the changing conditions in American schools. We agreed with Don Davies of the U.S.O.E. that these changing conditions were the following.[4]

1. Moving from a mass approach to an individual approach in education.

2. Moving from an emphasis on memorizing to an emphasis on learning how to think, how to learn, as well as an emphasis on the non-cognitive, non-intellectual components of life.

3. Moving from a concept of a school isolated from the community to a concept of a school that is in and of the community.

4. Moving from a fear of technology to utilizing machinery and technology for educational purposes.

5. Moving from a negative to a positive attitude toward children who are different.

6. Moving from a provincial perspective of the world and education to a multi-cultural perspective.

7. Moving from a system characterized by academic snobbery to one which recognizes and nurtures a wide variety of talents and fields.

8. Moving from a system based on serving time to one which emphasizes performance.

Because of the all encompassing impact of change in education, the Consortium which developed our model chose to prepare programs which dealt with **all** of those groups of educational personnel who are actively involved in the education, induction, and support of new teachers. We called these groups the major target populations for a changed program in teacher education. We identified them as: (1) Pre-service — Pre-school and Kindergarten teachers, (2) Pre-service — Elementary teachers (Grades 1-8), (3) In-service teachers (all levels), (4) College and University Personnel (the teachers of teachers), (5) Administrative Personnel (principals and supervisors in elementary schools), and (6) Supportive Personnel (paraprofessionals and teacher aides). For the same reason that existing plans of teacher education were not considered as models or limitations, we early state in our project report that the present structure of elementary teacher education is not considered a continued concept and local or national teacher education traditions are not maintained. Further, we strongly believed that any new and challenging teacher education model program that could come from our efforts could also result in corresponding changes and innovations in the elementary school setting where the model was to be applied and its products placed. Thus, we early abandoned the concept of teacher preparation for the elementary self-contained classroom and graded school and incorporated the idea of a multi-unit school and a team-teaching concept developed by the Wisconsin Research and Development Center for Cognitive Learning, called the Research and Instruction (R & I) Unit organizational pattern. The model we have produced is designed to prepare teachers for this type of elementary school which we think is an exemplary illustration of the elementary school of the future.

Our conceptual design for the project, which is graphically portrayed in Figure 1, first involved a search for general goals of teacher education; second, the examining of these goals in five contexts (in-

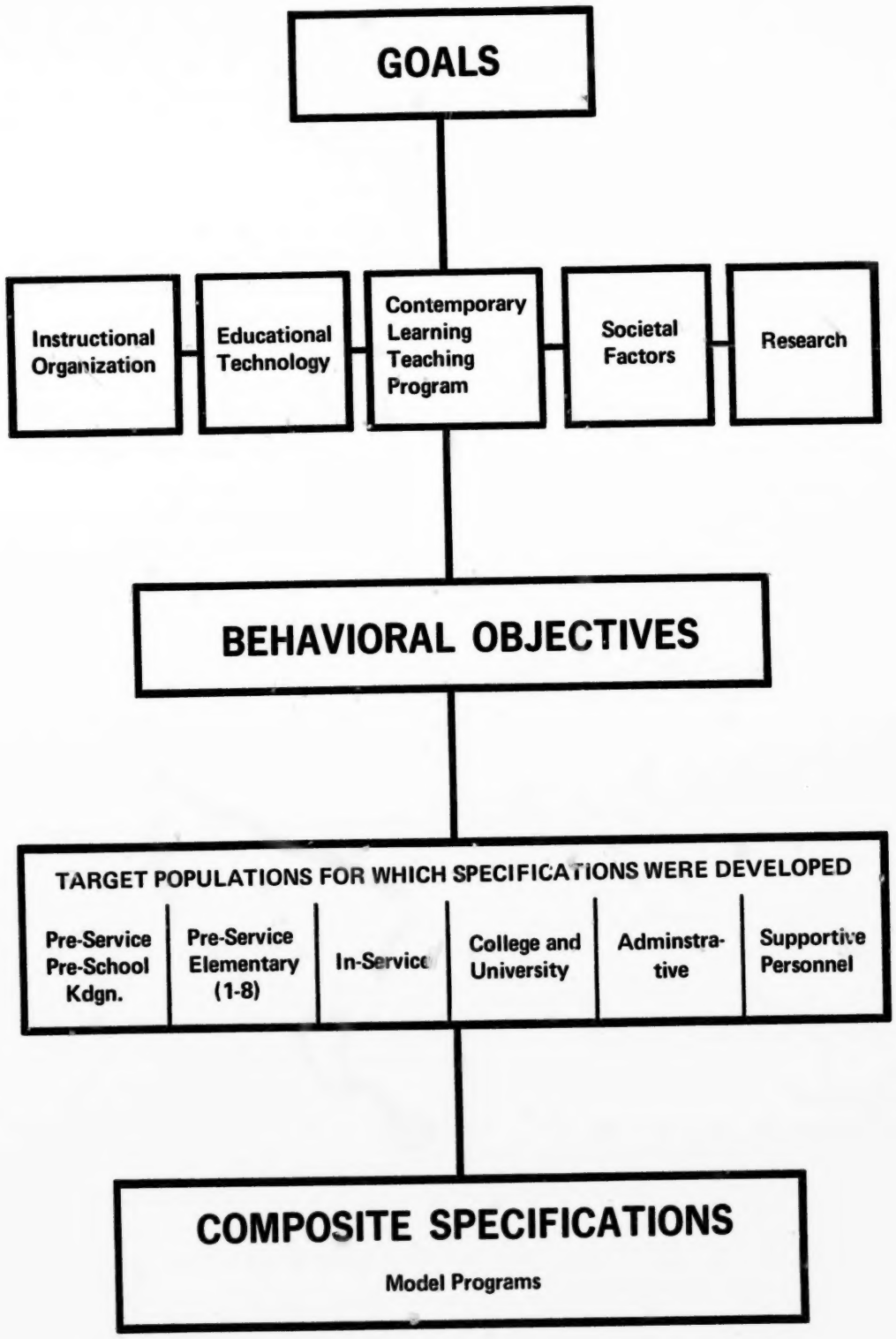

Figure 1 - CONCEPTUAL DESIGN

structional organization, educational technology, contemporary learning-teaching process, societal factors, and research); third, the development of behavioral objectives for these contexts; fourth, the creation of educational specifications incorporating the behavioral objectives for each of the six previously mentioned target populations, and finally, the bringing together of these specifications into composites called model programs.

The statement of goals for the program of teacher education was adapted from the objective and comprehensive effort of the Committee on Quality Education of the Pennsylvania State Board of Education. These goals were submitted to a steering committee of outstanding authorities for modification, addition and legitimation. They received enthusiastic support.

Because an additional and continuing concern of the project was to accommodate the forces of change, it was decided to begin to refine the general goals by considering them from the perspective of five contexts. These contexts represent the more important sources of change in teacher education today. An authority in each of the context fields prepared a position paper on his topic. Other knowledgeable persons in each context field were provided with these position papers and asked to react to them. These papers and reactions provided a rich source of data for the preparation of behavioral objectives. They are reproduced in this volume.

The behavioral objectives were a result of the combined efforts of the project staff, consultants and an independent consulting agency, EVCO Basic Instructional Research Design in Albuquerque, New Mexico. The consultants and staff provided the knowledge of the content and EVCO provided the expertise in translating this knowledge into the form of behavioral objectives. This productive partnership generated 2,123 objectives.

Because we were attempting to develop a comprehensive program, the behavioral objectives were prepared for the six target populations concerned with teacher education within the five contexts. The process at EVCO was to secure a breakdown of each context into major subject areas which were further divided into topics. Behavioral objectives were then prepared for each topic. An indication of the subjects and topics covered for each context is found in Tables 1, 2, 3, 4, and 5. These tables provide the full sweep of the project and reveal something of the total scope of the behavioral objectives and resulting educational specifications.

TABLE 1
CONTEXT — INSTRUCTIONAL ORGANIZATION

Major Subject Areas:

1. Necessary Training for Instruction
   Topics:
   1. General Education
   2. Curriculum Development and Evaluation
   3. Academic Disciplines and Skills — Methodology
   4. Evaluation Techniques for Multisized Group Instruction
   5. Curriculum Techniques for Multisized Group Instruction
   6. The Administration of Individually Guided Education
   7. Internship
2. Necessary Training for Research and Development
   Topics:
   1. Types of Research and Formulation of Problem Statement and Hypotheses
   2. Experimental Design and Implementation
   3. Statistical Analysis of Experimental Data and Interpretation of Results
   4. Testing and Development
   5. Development-Based Research
3. Multiunit Organization and Individually Guided Education
   Topics:
   1. The Context of American Public Education
   2. Organizational Structure and Functions
   3. Roles and Responsibilities
   4. Combination: Organizational Structure and Functions — Roles and Responsibilities
   5. Basic Pattern of the Multiunit Elementary School
   6. Pupil Behavior
   7. Qualifications of the Teacher Aide
   8. Functions of the Teacher Aide
   9. The Role of the Parent
   10. Organization of the Environment

TABLE 2
CONTEXT — EDUCATIONAL TECHNOLOGY

Major Subject Areas:

1. Instructional Media and Mediated Instruction
   Topics:
   1. Selection and Evaluation of Materials
   2. Design and Construction of Materials
   3. Utilization of Instructional Materials
   4. Learning Resources Center
2. Programed Instruction
   Topics:
   1. Sources of Instructional Programs and Program Development Information
   2. Measurable Behavioral Objectives

3. Advantages and Disadvantages
4. Instructional Programs and Instructional Events
5. Principles of Programed Instruction
6. Prompting
7. Learning Tasks Accomplished by Programed Instruction
8. Student Performance Data
9. Teaching Machines
10. Instructional Program Development and Adaptation

3. Computer Assisted Instruction
   Topics: 1. Elements of a CAI System
   2. Applications of a Computer to Instruction
   3. Advantages and Limitations of CAI
   4. Pupil Performance Data
   5. Development and Revision of Programs for a CAI System
   6. Sources and Evaluation of CAI Systems and Programs
   7. Operation of Equipment
   8. Administration of a CAI System
4. Instructional Simulation and Academic Games
   Topics: 1. Introduction
   2. Selection
   3. Utilization in Instruction
   4. Evaluation
   5. Modification and Design
5. Microteaching
   Topics: 1. The Uses of Microteaching and Characteristics of Microteaching
   2. Arrangement of the Microteaching Situation
   3. Participation in Microteaching
6. Research in Educational Technology
   Topics: 1. Preliminary Study
   2. Basing the System on Research

TABLE 3
CONTEXT — CONTEMPORARY LEARNING-TEACHING PROCESS

Major Subject Areas:

1. Cognitive Domain
   Topics: 1. Theories of Concept Learning
   2. Concept Formation
   3. Problem Solving
   4. Creativity
2. Affective Domain
   Topics: 1. Attitudes and Values
   2. Personality Integration

3. Social Learning (Including Psychomotor Domain)
   Topics: 1. Social Skills
   2. Psychomotor Skills
4. Basic Behavioral Operations
   Topics: 1. Reinforcement
   2. Extinction
   3. Punishment
   4. Schedules of Reinforcement
5. Contingency Management
   Topics: 1. Premack Principles
   2. Successive Approximations
   3. Task and Reinforcing Event Areas
   4. Reinforcing Event Menu
   5. Contract Apron
   6. Techniques for Automatic Contingency Management Generation
   7. Contingency Contracting
   8. Progress Checks
6. Self-Management
   Topics: 1. Self-Contracting
   2. Contiguity Principle Applied to Self-Management
   3. Elimination of Undesirable Behavior
   4. Coverant Contral

TABLE 4
CONTEXT — SOCIETAL FACTORS

Major Subject Areas:

1. Culture and Cultural Transmission
   Topics: 1. Enculturation
   2. Culture, Education, and Curriculum
   3. The Impact of Mass Media
   4. Discontinuity
2. Social Stratification and Social Mobility
   Topics: 1. Social Stratification and Its Effect on Education
   2. Social Mobility
   3. Methods of Increasing Social Mobility
3. Demographic Forces
   Topics: 1. Population Growth
   2. Geographic Mobility
   3. Population Distribution
4. Cultural Change
   Topics: 1. Cultural Lag Problems in the School
   2. The Expanding Role of the School
   3. Modification of Educational Processes by Technology
   4. Theories of Social Change
   5. Response of Education to Socio-Cultural Change
5. Social Control
   Topics: 1. Roles Within the School
   2. The Role of Community Pressure Groups in Control of Education

3. The Role of Federal, State, and Local Government in Control of Education
4. The Role of Teacher Organizations in Control of Education
5. The Effect of Religious Control on Education
6. The Role of Industry in Control of Education

6. Education as a Social Institution
   Topics: 1. Interactional Patterns
   2. Bureaucratic Hierarchy
   3. Career Patterns of Teachers
   4. Differential Standards that Affect the Status of the Profession

TABLE 5
CONTEXT — RESEARCH

Major Subject Area:

1. Research Reports
   Topics: 1. Evaluating a Research Report
   2. Implementing the Findings of a Research Report

2. Research on Teacher Education Practices
   Topics: 1. Function and Objectives of Teacher Education
   2. Admission, Retention and Recruitment in Teacher Education
   3. Organization and Administration of Teacher Education
   4. Curriculum in Teacher Education
   5. Instruction and Field Experience in Teacher Education
   6. Development of the Multiunit School
   7. Research on Teaching

3. Research on Teacher Characteristics
   Topics: 1. Teacher Characteristics
   2. Attitudes
   3. Values, Interests, and Favored Activities
   4. Adjustment Needs
   5. Personality Factors
   6. Cognitive Abilities
   7. Cross-cultural and Cross-national Characteristics
   8. Projective Techniques

4. Research on Teacher Behaviors
   Topics: 1. Assessment of Teacher Behavior
   2. Interaction Analysis
   3. Evaluation of Teacher Behavior

5. Media and Innovations in Teacher Education
   Topics: 1. Providing Efficient Observation of Classroom Behavior
   2. Providing More Efficient Self-Instruction and Supervised Practice Experiences
   3. Providing a Direct Means of Presenting Teacher Education Courses
   4. Providing Better Standards of Teacher Performance
   5. Conducting Basic Research into Teaching and Learning Processes

Educational specifications were then formulated to implement the entire range of behavioral objectives. Each specification consisted of a behavioral objective or objectives to be implemented, the treatment to be utilized in accompanying the objective, materials needed, and the evaluation procedures to be applied to determine whether the objectives had been successfully achieved. Because of overlap, 818 specifications were able to accommodate the over 2,000 behavioral objectives. Specifications were prepared by the project staff, personnel from the Wisconsin R & D Center, MOREL (a regional educational laboratory), and consultants.

Because it is difficult for any reader who has not examined the Ohio model report to visualize an educational specification, examples of educational specifications are included in Tables 6, 7, 8, 9, and 10. These examples have been taken at random and provide a limited indication of the types of specifications developed for each of the context areas. A specification is usually a page or three-quarters of a page in length and deals with one or more than one behavioral objective. Most specifications are applicable to more than one target population although some apply to only one population. The statements provided on treatment, materials, and evaluation are exemplary in nature and are not considered the only techniques or sources applicable toward meeting the behavioral objective(s).

TABLE 6

Number: 1114

Context: INSTRUCTIONAL ORGANIZATION

Major Subject Area: Necessary Training for Instruction

Topic: Academic Disciplines and Skills — Methodology (Reading)

Target Population: Pre-S., Elem., In-S, C/U

Behavioral Objectives: 2

(1) The student will list the factors to be considered in adjusting instruction in reading to the individual differences in pupils.

(2) The student will demonstrate that he understands the advantages of reading instruction using the flexible grouping plan and materials written on multiple levels of difficulty.

Treatment:

The student will read to gain insight into techniques of diagnosing for specific reading strengths and weaknesses, using diagnostic results for differentiated instruction, and organizing the classroom to permit individual and small group teaching.

The instructor will demonstrate the administration and use of diagnostic tests in reading and the student will practice their administration in identifying specific strength and weaknesses of each pupil.

The student, in simulated teaching situations, will experiment with a variety of methods of grouping the classroom for differentiated instruction.

Materials:

Heilman, A. **Principles and Practices of Teaching Reading.** Veatch, J. **Reading in the Elementary School.**

The Gray Oral Reading Test. The Durrell Diagnostic Test of Reading Difficulties.

Evaluation:

The student will listen to taped recordings of a child's oral reading and will record his specific difficulties in word attack skills and comprehension abilities. From diagnostic findings the student will indicate the type of instruction necessary for that child and how he will go about organizing such instruction.

TABLE 7

Number: 2064 .....

Context: EDUCATIONAL TECHNOLOGY

Major Subject Area: Computer Assisted Instruction

Topic: Advantages and Limitations of CAI

Target Population: Pre-S., Elem., In-S., C/U, Admin.

Behavioral Objectives: 2

(1) The student will explain the potential of CAI in individualizing the instructional process by describing possible provisions for:

a. permitting different student progress rates.
b. using identified characteristics of the learner to determine the type of program he receives.
c. allowing continual checking or testing, and presenting a learning sequence accordingly.
d. applying carefully planned and controlled reinforcement schedules.

(2) The student will explain how CAI can aid the teacher in evaluating both the performance of pupils and the CAI instructional sequence by describing the computer capability for record storage, data retrieval, and calculation of summary data.

Treatment:

Discuss ways of individualizing instruction in classroom; decide "can the computer do what the teacher can do?" Consider open-ended-answer test situation; list what teacher can do, what is possible with CAI (judge whether teacher can correct, control time per item, record alternate answers, etc., which are feasible in terms of time involved).

Materials:

Suppes, P. "Some Theoretical Models for Mathematics Learning" **Journal of Research and Development in Education.**

Computer output and summary data; materials from manufacturers.

Evaluation:

The student will compare an instructional sequence presented in the classroom by the teacher and by CAI, citing the possibilities for individualizing instruction and utilizing informational data in each.

TABLE 8

Number: 3116

Context: CONTEMPORARY LEARNING-TEACHING PROCESS

Major Subject Area: Cognitive Domain

Target Population: Pre-S., Elem., In-S.

Behavioral Objectives: 5

(1) The student will describe methods of encouraging elementary pupils to be creative in many media.

(2) The student will describe traditional teaching methods that inhibit divergent production in elementary pupils.

(3) The student will select an appropriate area from his own academic discipline and describe how he would encourage divergent production within that area.

(4) The student will describe methods of encouraging continuing creative expression in elementary pupils.

(5) The student will describe methods of encouraging productivity in elementary pupils.

Treatment:

The student will read listed source materials. The student will collect examples of elementary school creative products in various media for inspection by the group. The students will observe a videotape recording of classroom activity, and will analyze where creativity has been encouraged or inhibited. The student will present role-playing demonstrations of teaching methods which encourage creative expression and production. The class will hold a brain-storming session on methods for encouraging creativity in the classroom.

Materials:

Torrance, E. P. **Guiding Creative Talent.** Torrance, E. P. **Rewarding Creative Behavior.** Miel, A. (Ed.) **Creativity in Teaching.** Parnes, S. J. and Harding, H. F. (Eds.) **A Source Book for Creative Thinking.** Gowan, J. C.; Demos, G. D.; Torrance, E. P. (Eds.) **Creativity: Its Educational Implications.**

Evaluation:

Student's role-playing demonstrations.

TABLE 9

Number: 4148

Context: SOCIETAL FACTORS

Major Subject Area: Social Control

Topic: The Effect of Religious Organizations on Education

Target Population: Pre-S., Elem., In-S., C/U, Admin.

Behavioral Objectives: 3

(1) The student will summarize the history of the relationship between religion and education.

(2) Given the instruction to list the areas of school operation that are influenced by religion, the student will list and describe historical and contemporary influence on:

a. curriculum.

b. character and deportment training for elementary students.

c. teacher morality.

(3) The student will describe legalistic guidelines placed upon teachers in respect to religious observances in public schools.

Treatment:

(1) Students will attend a panel discussion by representatives of the major religions concerning the specific topic of "The Position of — Church on Public Education."

(2) The instructor will supplement this by a review of the historical relationships of church and school.

Materials:

Corwin, R. A. **Sociology of Education.** McCluskey, N. G. **Catholic Viewpoint on Education.**

Clergymen.

Evaluation:

Given a list of activities, the student will separate those concerning religion which are presently appropriate for schools from those which are prohibited by law or policy.

TABLE 10

Number: 5010 .....

Context: RESEARCH

Major Subject Area: Research on Teacher Characteristics

Topic: Cross-cultural and Cross-national Characteristics

Target Population: Pre-S., Elem., In-S., Admin.

Behavioral Objectives: 1

Given a series of teaching situations that include:

a. the socio-economic factors of the community

b. a subject matter and the grade level to be taught

c. a personality pattern profile on pupils

d. a completed survey that reveals the cultural and national characteristics of the teacher,

the student will identify:

a. the characteristics that are cross-cultural and cross-national

b. the cultural and national characteristics that differ between the teacher and the target population

c. the characteristics that differ between the teacher and the target population but are considered as having little adverse effect on teaching effectiveness

d. those differing characteristics that are considered adversely affecting teacher effectiveness.

Treatment:

The student will be provided access to a variety of teaching situations in elementary schools that represent various aspects of the factors indicated in the objective. On an observation form he will record and label the characteristics as observed which affect, positively or negatively, the teaching situation. These will be discussed in a class session devoted to a consideration of cross-cultural and cross-national characteristics. Such activity can occur in a term spent abroad and/or during a term involving the visiting of various types of schools in the vicinity of his collegiate institution.

Materials:

A statement of the socio-economic factors existing in the community containing the schools being observed, a personality pattern profile on pupils observed and a completed survey of the cultural and national characteristics of the teachers observed.

Evaluation:

The student will prepare an oral report to be used as a basis for class discussion of cross-cultural and cross-national characteristics.

In order to deal with the 818 specifications it was necessary to process them in some way to permit selection, rejection, ordering and re-ordering according to a target population to be served. This was accomplished by a coding process which resulted in the major parts of each specification being reduced to an information form that could be contained on IBM cards. This made possible the use of a computer to secure quickly the identification of desired specifications as well as to provide summaries of information about them. In order to secure all of the desired information for each specification, it is, of course, necessary to read each "spec." However, it is possible to collect rapidly all specifications pertaining to a particular target population, a context, subject area, topic, treatment, type of evaluation, or material. Thus, there is no prescribed way of ordering the specifications. They can be ordered as a function of the progressive difficulty of content, ease of administration (that is, all activities to be performed in a field or the classroom could be grouped together), by a teaching method such as academic presentation followed by simulation followed by actual application or by some other method. The card deck containing the coded specifications can provide any user, who is able to state general goals and specific objectives for particular instructional efforts, the specifications relevant to his objectives and to re-order or re-sequence them on the basis of whatever criterion he wishes to utilize. Thus, a process has been provided for the utilization of the product (specifications) from which teacher education programs for various target populations can be developed and which can be limited to a few hours of instruction or extended into years of useful educational experiences. The process and the product are never static but always flexible and innovative.

Finally, a process of evaluation was selected for the Ohio design which was of prime importance because it is not only a guide for future planning but also serves to direct any implementation effort. Also, it was necessary to devise an evaluation model which would permit comparisons between the Ohio program and other strategies of teacher education. The model developed for the Ohio project has all of these requisite capabilities and more. The evaluation model in our design is basically a process of obtaining and providing information for decision-making which is continuous and systematic.

This limited account of the Ohio model provides a partial impression of what it intended as "change" in teacher education. A better understanding of the directions and conceptions on which the model is based can be found in the basic assumptions we hold about it.

Rationale for the Consortium Model

Certain of these basic assumptions are implicit in the preceding pages. For example, we consider five conditions of life and education of major importance to teacher education and these conditions we call the "contexts" of instructional organization, education technology, contemporary learning-teaching process, societal factors and research. We have assumed that it is not practicable in terms of elementary schools of the future, to prepare teachers for the outmoded self-contained classroom but rather to orient teacher training to a differential staff team-teaching type of elementary school organization. Elementary teachers who are to be involved with educational change must receive their training in connection with this type of school organization and practice. Our concern about six target populations for initial education and re-education efforts stems from the belief that all elements of the elementary education system must be given appropriate and adequate treatment to the best degree possible in each situation or limited, negligible change will result in teacher education curriculums and elementary education programs. Our strategy is an attempt to insure that new and retrained teachers will receive intelligent and sympathetic support in elementary schools, minimizing future risks of teacher failure and general educational unresponsiveness to change. The failure of previous attempts to change teacher education has occurred partially because of pre-occupation with pre-service educational populations rather than all populations concerned with schools.

Other assumptions can be made more explicit:

1. We assume that instruction in the elementary school will not be limited to traditional group activities but that individually

guided instruction or a program of individualization will be further developed. It is essential for teachers to have preparation and proficiency in dealing with such programs.

2. We feel that the pre-school teacher needs to be more generally prepared in the subject matter of elementary education but that the elementary teacher must have basic teaching competence in the fields of language arts (reading), social studies, mathematics, and science with specialization in one of these fields of study. Unlike the pre-school teacher, the elementary teacher would not have preparation, as is the case presently, as a generalist.

3. We feel that the rapid development of educational technology and related materials for instruction needs a similar concentrated effort to train teachers accordingly. There has been insufficient use of the products of educational technology in schools and better uses of television, computers, and other hardware or software products will find increasingly more usage in elementary classrooms when teacher training involves a full consideration of educational technology.

4. There now exists a great deal of information about the learning-teaching process which is not being effectively incorporated into teacher training programs. The development and use of behavioral objectives in our specifications puts the emphasis upon the outcome, behavior, and overt operational procedures by which specific behavior can be elicited. Teacher education programs and teaching needs more of this orientation while still continuing a healthy respect for the developmental point of view.

5. We know by this time that teachers must be keenly aware of cultural differences which may be external to but, nevertheless, have an effect upon the educational setting. The training of teachers with primarily a single, middle class orientation to the learner is no longer relevant in our multi-cultured, dynamic society. Students must be inculcated with a degree of cultural relativism which obviously involves less emphasis on traditional foundation of education courses. A teacher education program for tomorrow must put considerable experimential effort toward helping all teachers deal effectively with cultural and societal factors.

6. We have blithely ignored most of the research in teacher education and relied upon philosophical assumptions and historical events to arrange teacher education programs. The time has come for teachers to become classroom researchers, to pay more attention to the research on teacher characteristics, and to become adept in assessing and evaluating teaching behavior and style. Research on cross-cultural and cross-national teacher characteristics suggests necessary personal and teaching experiences abroad which will help develop within teachers a world point-of-view on man and society. An emphasis on research related to teacher education is involved in our desire to extend the knowledge and vision of teachers about themselves and teaching.

7. The basic approach to training teachers will be through a multi-activity type program that emphasizes the combination approach of work and study, practicum and experience, and content and training. The traditional reliance on college course work separated from or accompanied by limited experience is not the program suggested by the Ohio model.

8. There will be considerable involvement of public schools as the physical facility for a considerable part of teacher education. Training colleges or universities and public schools will put forth a continuous cooperative and coordinated effort.

9. It is assumed that selection criteria will apply to pre-service programs developed from the Ohio specifications but in-service programs of any type, public school or college, will be applicable to present populations serving in these institutions. However, selective retention and dropout are not precluded after entry to any program.

10. A number of assumptions are apparent relative to college and university personnel. The development of the model program will begin with this population, for considerable re-education and training is necessary. Obviously, more work in research and development and technology will be required as program implementation begins. Traditional departmental organizations and

within-college structures will require modification, as it is assumed that a new program should have an operational structure fitted to it and not attempt to adjust the model to existing organizational patterns.

11. It is assumed that the length of teacher education programs based on the Ohio specifications will vary considerably with the type and implementation of any specific program. The present pre-service structure of four years can be used as a starting point, but the specifications are flexible so that deviations can occur from traditional time schedules. We do not assume any particular academic degrees to be awarded with the specifications as this is left to the implementing institution as its option. We do assume that the pre-service teacher prepared according to our model will participate in a program of continuing education after entry into the teaching profession. Finally, we assume that the length of time any candidate remains in a training program is totally dependent on the capacity and ability of the individual to meet program requirements.

Space is not sufficient to provide all of the features of the Ohio model. The specifications as a whole constitute an exemplary, not an ideal, program. There are myriad approaches to developing specifications for behavioral objectives and all approaches cannot be specified in the Ohio or other models. We have tried to provide in each specification not a broad, general direction nor a highly specific, narrow treatment. We have tried to provide a succinct and consistent approach to an objective which is clear and practicable. The specifics possible beyond this are left to future program planners. We think our product can stand as an entity, but it is not intended to rule out the possible inclusion of other subjects and topics important to teacher education. We have tried to develop one strategy for making an immediate impact upon all of the principal participants in a program of teacher education. We have tried to avoid rigidity, to provide prescription with flexibility, and it is not intended that what has been created should remain the same. We do assume that our specifications are not "forever" the last word in teacher training. The procedures for implementing our model includes provisions for prompt

and objective feedback which has a self-correcting, bringing-up-to-date aspect. The opportunity is present for a teacher education program to become a changing instead of a static process. Hopefully, our teacher education model should become self-renewing and constantly becoming an outstanding program even though at any one point in time the specifications and associated elements in being should be relevant and effective.

The efforts of the Ohio Consortium research team and those of the other eight participants in this project have been a serious, comprehensive attempt to design and ultimately implement important changes in teacher education. The position papers which follow were of crucial importance in the creation of the Consortium design. As project director, it was my privilege to collaborate with the talented authors of each of the manuscripts which follow. I invite your serious consideration of the ideas presented and, on behalf of the Consortium and the project staff, I acknowledge a debt of gratitude and express again our appreciation for their important contribution to our efforts.

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